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STRATEGIC LEADERSHIP
A S S O C I A T E S , I N C

Creating Consensus on Vision and Strategy

MARSHALL SPACE FLIGHT CENTER
SAFETY AND MISSION ASSURANCE DIRECTORATE
STRATEGIC PLAN UPDATE

JULY 10, 2006

PREPARED BY:
SAFETY AND MISSION ASSURANCE
SENIOR MANAGEMENT TEAM

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I.   OVERVIEW AND BACKGROUND:

The MSFC Safety and Mission Assurance Directorate (hereinafter known as S&MA) provides and supports mission critical safety and mission assurance functions for all MSFC projects and leads the industrial safety program for the Center. S&MA has updated its long-range strategic plan to serve as a focal point for continuous improvement and customer service excellence in its safety and mission assurance roles for MSFC and the Agency.

Between August and October 2000, S&MA conducted a comprehensive key stakeholder customer satisfaction process assisted by Strategic Leadership Associates. This resulted in a comprehensive external evaluation of S&MA functions serving the safety and mission assurance needs of S&MA's internal and external customers.

In April 2005, the S&MA management team developed its current strategic plan under the leadership of Dr. Jan Davis, the S&MA Director at that time. Since then, the S&MA management team has conducted bi-weekly meetings to review progress made on the S&MA Strategic Plan actions.

Since the initial plan development, S&MA has made steady progress in its organizational and discipline processes, including:

- **Increased involvement in MSFC projects and programs**
- **Achievement of Directorate status in center reorganization**
- **Active role in Shuttle Return-To-Flight initiatives**
- **Established training and certification program for all disciplines**
- **Recruitment of discipline experts**
- **Nearly filled personnel levels**
- **Completion and follow-up on 2005 S&MA Employee Survey**
- **Development of management team agreements (4D process)**
- **Alignment of objectives and forecasted measurable outcomes with the center**
- **Recognition of SES leadership status of Director and Deputy Director roles**
- **Individual department/office off-sites for planning**
- **Measurable results demonstrated on strategic plan actions**

On September 14-15, 2005, the following S&MA senior leaders and support contractors participated in a review and update of the current strategic plan:

Dr. Jan Davis	Steve Robbins
Roy Malone	Irene Taylor
Scott Jackson	Terry Hamm
Dave Spacek	Coy Newton (HEI)
Toan Vu	Randy Reed (HEI)
Ron Mize	Mike Herston (ASRI)
Chris Cowart	David Ramey (SLA)
Steve Tesney	

The following Directorate Strategic Plan incorporates the Vision, Performance Metrics, Action Plans, Core Competencies, and Strategic Assessment of the current leadership team. The plan will be monitored and directed by QD01 in conjunction with the department/office managers.

II. FY06 PERFORMANCE METRICS BY DEPARTMENT

TO BE REPORTED AT THE S&MA MANAGEMENT STATUS REVIEW (MSR)

BUSINESS MANAGEMENT OFFICE/QD03

FY06 PERFORMANCE METRICS STATUS

METRIC & CRITERIA	O	N	D	J	F	M	A	M	J	J	A	S	FY06
Annual NSTC Safety Training Needs Assessment conducted for MSFC													
Monthly QD03 SSWP completion rate of 100%													
Annual JHA review/update of 100% of QD03 employees													
Monthly workforce report of the S&MA actual vs. plan by pgm/proj provided to Dept/Ofc managers													
Work with Dept/Ofc managers annually to discuss and agree on CWC numbers													
Monthly status report provided on S&MA vacancies													
Quarterly and annual QD01 customer satisfaction survey results provided													
QD03 customer satisfaction survey results > 90%													
Submit coordinated and on-time budgets for all S&MA sources													
IDPs updated annually for 100% QD03 employees													
Ensure 100% completion in safety training (IT security)													
Ensure 100% completion in safety training Administratively Controlled Information (ACI)													
Process awards & training requests													
Annual Security Training													
Annual QD03 off-site conducted													
Minimum 1 person rotate in and/or out of QD03 annually													
5-year Business Plan reviewed and updated													
Conduct value-added capabilities and communication to MSFC Directorates & Offices, S&MA-related topics communicated Center-wide													

🟥 Exceeds Threshold	🟨 Approaching Threshold	🟩 Acceptable	⬜ Data Not Available	

LAUNCH SYSTEMS ASSURANCE DEPARTMENT/QD10

FY06 PERFORMANCE METRICS STATUS

METRIC & CRITERIA	O	N	D	J	F	M	A	M	J	J	A	S	FY06
Monthly QD10 SSWP completion rate of 100%													
Annual JHA review/update of 100% of QD10 employees													
QD10 involvement beginning no later than Phase A in 100% of QD10-applicable MSFC pgm/proj approved by PMC													
100% QD10 staffing to pgm/proj (per CWC)													
QD10 customer satisfaction survey results > 90%													
100% on-time delivery of QD10 products supporting pgm/proj milestones													
No quality-related escapes that result in a Type A or B mishap, or renders a test article unusable**					N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	**N/A***
Minimum 20% annual increase of eligible QD10 workforce participating in PDRM process													
Average 60% QD10 attendance at monthly S&MA discipline working group meetings													
Annual QD10 off-site conducted													
Weekly QD10 meetings conducted for managers and team leads													
At least 1 communiqué annually about QD10-related topics													

*Function transferred to QD40 in Feb. '06

🟥	Exceeds Threshold	🟨	Approaching Threshold	🟩	Acceptable	⬜ Data Not Available

SHUTTLE ASSURANCE DEPARTMENT/QD20

FY06 PERFORMANCE METRICS STATUS

METRIC & CRITERIA	O	N	D	J	F	M	A	M	J	J	A	S	FY06
Monthly QD20 SSWP completion rate of 100%													
Annual JHA review/update of 100% of QD20 employees													
Certification of Flight Readiness items completed prior to flight													
100% Pre-Flight Assessments conducted for all Shuttle Propulsion Elements prior to each mission													
Minimum 95% staffing to pgm/proj (per CWC)													
100% on-time delivery of QD20 products supporting pgm/proj milestones													
QD20 customer satisfaction survey results > 90%													
Minimum 20% annual increase in number of eligible QD20 workforce participating in PDRM process													
Average 60% QD20 attendance at monthly S&MA discipline working group meetings													
Minimum of 2 persons participating in rotational assignments annually (including within department)													
Annual QD20 off-site conducted													
At least 1 communiqué annually (Star articles, MTM topics, etc.) about QD20-related topics													

■ (Red) Exceeds Threshold   ■ (Yellow) Approaching Threshold   ■ (Green) Acceptable   □ Data Not Available

SCIENCE & MISSION SYSTEMS ASSURANCE DEPARTMENT/QD30

FY06 PERFORMANCE METRICS STATUS

METRIC & CRITERIA	O	N	D	J	F	M	A	M	J	J	A	S	FY06
Monthly QD30 SSWP completion rate of 100%													
100% of employees will accompany supervisor on at least one (1) Supervisor Safety visit annually													
Annual JHA review/update of 100% of QD30 employees													
QD30 planning and requirements documents accepted and in place prior to first milestone review													
QD30 involvement beginning no later than Phase A in 100% of QD30-applicable MSFC pgm/proj approved by PMC													
95% QD30 staffing to pgm/proj (per CWC)													
100% on-time delivery of critical S&MA deliverables for QD30 programs/projects													
QD30 customer satisfaction survey results > 90%													
Minimum 20% annual increase in number of eligible QD30 workforce participating in PDRM process													
Average 60% QD30 attendance at monthly S&MA discipline working group meetings													
All employees will develop/update Individual Development Plans annually, ensuring that at least one (1) discipline expert training course is designated as essential													
Annual QD30 off-site conducted													
Minimum 1 person rotate in and/or out of QD30 annually													
Conduct, at a minimum, semi-annual face-to-face visits with key QD30 customers to address issues, concerns, and S&MA capabilities													
Contribute at least one (1) QD30-related communiqué annually													

🟥 Exceeds Threshold   🟨 Approaching Threshold   🟩 Acceptable   ⬜ Data Not Available

SR&QA POLICY & ASSESSMENT DEPARTMENT/QD40

FY06 PERFORMANCE METRICS STATUS

METRIC & CRITERIA	O	N	D	J	F	M	A	M	J	J	A	S	FY06
100% QD40 assigned areas monthly safety visits & meetings													
Annual 100% audit of Center EMS system													
Annual 100% review of JHA													
Peer review of MSFC S&MA plans and requirements for 50% of new programs and projects													
Minimum of 35% annually of NASA Software Assurance Compliance Plan requirements implemented until FY08													
IA coverage of 10% of MSFC PMC pgm/proj annually													
CRM instruction/facilitation of 25% MSFC PMC-approved projects annually													
Annual assessments of minimum 20% of MSFC pgm/proj CRM implementation													
Annual audits of 100% of MSFC Offices & Directorates to AS9100 Management System													
Minimum of 95% of pgm/proj Problem Reporting and Corrective Action (PRACA) reports submitted on time													
ALERTS released within required timeframe 95% of the time													
QD40 customer satisfaction survey results >90%													
Minimum 20% annual increase of QD40 personnel qualified via PDRM process													
Average 60% QD40 attendance at monthly S&MA discipline working group meetings													
Provide 40 hrs. minimum annual specialized training to experts/mentors in QD40													
Annual QD40 off-site conducted with 80% participation													

con't

	Exceeds Threshold		Approaching Threshold		Acceptable		Data Not Available

SR&QA POLICY & ASSESSMENT DEPARTMENT/QD40 – con't

FY06 PERFORMANCE METRICS STATUS

METRIC & CRITERIA	O	N	D	J	F	M	A	M	J	J	A	S	FY06
No quality-related escapes that result in a Type A or B mishap, or renders a test article unusable*	N/A	N/A	N/A	N/A									
Minimum 1 person rotate in and/or out of QD40 annually													
Minimum of 2 SRM&QA discipline-related communiqués annually from QD40													
Participate in a minimum of 4 SRM&QA conferences													

*Function resided in QD10 until Feb. 2006

🟥 Exceeds Threshold	🟨 Approaching Threshold	🟩 Acceptable	⬜ Data Not Available

INDUSTRIAL SAFETY DEPARTMENT/QD50

FY06 PERFORMANCE METRICS STATUS

METRIC & CRITERIA	O	N	D	J	F	M	A	M	J	J	A	S	FY06
Monthly safety walkthrough training conducted for MSFC supv/mgrs. 100%													
Safety training conducted for new employees and temps 100%													
Monthly SSWP safety topics provided for supv/mgrs 100%													
100% of annual OSHA facility insp., semi-annual hazardous ops., & constr. Insp. conducted													
Minimum 2 new tools/enhancements developed annually (i.e. close call reporting)													
100% of safety audits of onsite civil service orgs and prime contractors that perform hazardous ops completed annually													
100% of safety audits of onsite civil service orgs and prime contractors that perform non-hazardous ops completed bi-annually													
Monthly QD50 SSWP completion rate of 100%													
Maintain overall MSFC Team (civil serv/contr) PEP survey score of 4.0 or higher													
Review contractors' self-assessments completed within 2 weeks of receipt													
100% of annual fire drills conducted													
IHOPs submittals reviewed by QD50 within 90 days of entry into database													
Certification packages and/or deviations reviewed and approved/disapproved within 30 days of receipt													
Monthly and annual reports submitted to meet required deadlines													
Paperwork reviewed and certification issues/disapproved within 30 days of receipt													

con't

🟥 Exceeds Threshold   🟨 Approaching Threshold   🟩 Acceptable   ⬜ Data Not Available

INDUSTRIAL SAFETY DEPARTMENT/QD50 – con't

FY06 PERFORMANCE METRICS STATUS

METRIC & CRITERIA	O	N	D	J	F	M	A	M	J	J	A	S	FY06
Minimum 95% QD50 staffing to pgm/proj (actual vs. CWC)													
QD50 customer satisfaction survey results > 90%													
Minimum 20% annual increase in number of eligible QD50 personnel participating in PDRM process													
Average 75% QD50 attendance at monthly S&MA discipline working group meetings													
Minimum 5% of workforce participating in mobility assignments annually													
Annual QD50 off-site conducted													
Customer education process established on QD50 value-added capabilities and communicated to MSFC Directorates and Offices by end of FY06, with 25% customer outreach annually thereafter													
At least 6 communiqués annually about QD50-related topics													

🟥 Exceeds Threshold	🟨 Approaching Threshold	🟩 Acceptable	☐ Data Not Available	

III. <u>STRATEGIC ACTION PLANS</u>

MSFC S&MA Objective 1:
Ensure a safe work environment for the MSFC workforce

Key Decisions and Actions	Start Date	Scheduled Completion Date	Responsibility	Performance Measures/Metrics
1.1 Develop and implement a training assessment checklist that helps supervisors assure employees have identified and completed required SHE training	01/01/05	02/28/06	Judy Milburn	• Training assessment completed on time • At least 80 % of MSFC employees completing required training
1.2 Upgrade SSWP to include supervisor finding oversight and tracking, and add training module to link and monitor the training assessment	10/01/05	01/31/06	Teresa Durrette	• Completed on time
1.3 Implement new safety assessment process that tracks and maintains records of assessments and hazards identified	10/01/05	08/31/06	Kristie French	• New process adequately tested to make final decision whether or not to use it for all future assessments.

MSFC S&MA Objective 2:
Ensure the safety and mission success of MSFC programs/projects through application of SRM&QA principles

Key Decisions and Actions	Start Date	Scheduled Completion Date	Responsibility	Performance Measures/Metrics
2.1. Establish clear understanding of service pool funding plan for S&MA direct support to pgms/projs and for G&A. Seek direct funding from pgms/projs to service pool vs. tax off the top of dollars given to MSFC.	Underway	Ongoing	Roy Malone Scott Jackson	• On time
2.2 Propose policy for center level approval to establish those pgms/projs/activities that require S&MA involvement (include level of involvement and timing)	12/15/05	04/30/06	Angelia Walker Department Managers	• First draft January 2006 • Second draft March 2006 • Final draft April 2006
2.3 Propose policy/process for center-level approval to establish a venue for S&MA to be involved in proposals for new work at MSFC	12/01/05	02/28/06	Roy Malone Scott Jackson	• First draft early November 2005 • Final draft December 2005
2.4 Develop S&MA resource analysis tool or planning template for cost estimate to gain consistency & credibility with all projects	12/15/05	07/30/06	Angelia Walker Steve Tesney Scott Jackson	• Data collection to populate model (March 2006) • Working model to test against CWC input (August 2006)

MSFC S&MA Objective 2 – con't:
Ensure the safety and mission success of MSFC programs/projects through application of SRM&QA principles

	Key Decisions and Actions	Start Date	Scheduled Completion Date	Responsibility	Performance Measures/Metrics
2.5	Develop generic checklist as self-assessment tool for verifying all aspects of S&MA support to pgms/projs (also for cost estimate). [Ref SMART Tool and Handbook as background]	03/31/06	TBD	Irene Taylor Discipline Champions	Once 2.4 complete, will determine need for this product • First draft January 2006 • Final draft March 2006
2.6	Develop tool for initial development of S&MA planning and requirement documentation	12/01/05	TBD	Discipline Champions HEI	B. Wessel action to create agency template for S&MA Plans – will tailor for MSFC applications when complete • Electronic template January 2006 • "Turbo-Tax" version October 2006
2.7	Revisit Project Assurance PDRM and determine best means of how it will be implemented	12/01/05	07/01/06	Mike Galuska	• Deployment of PDRM process effectively
2.8	Develop process for documenting post-CWC agreements for staffing	12/01/05	04/30/06	Scott Jackson Department Managers	• Monthly MSR report

MSFC S&MA Objective 3:
Further develop S&MA discipline expertise

	Key Decisions and Actions	Start Date	Scheduled Completion Date	Responsibility	Performance Measures/Metrics
3.1	Assess option of making core discipline training mandatory (as identified in Professional Development Roadmaps)	12/15/05	02/28/06	Roy Malone	• Decision made on whether or not PDRMs mandatory
3.2	Incorporate discipline training into S&MA mission support services contract requirements	12/01/05	09/26/06	Angelia Walker	• Req't incorporated into follow-on contract
3.3	Develop process-based approach to identify and assure the necessary skill mix available to support pgm/proj and institutional needs by updating gap analysis for projects and institutional support	12/15/05	05/30/06	Scott Jackson Dept Mgrs	• Gap analysis completed
3.4	Update list of employees external to QD possessing S&MA skills, and initiate contact to determine level of interest in transferring to QD	10/01/05	01/30/06	Dave Spacek	• List updated and maintained
3.5	Support the ATC in developing an agency process for developing S&MA expertise	12/15/05	Ongoing	Angelia Walker	• ATC has agency lead on PDRMs

	Key Decisions and Actions	Start Date	Scheduled Completion Date	Responsibility	Performance Measures/Metrics
3.6	Assess potential of increasing emphasis on S&MA core disciplines by creating discipline managers for SRM&QA that are "equal" to Dept. Mgrs that will mentor, provide input to performance appraisals, IDP concurrence, and be involved in resource management process	12/01/05	06/30/06	Roy Malone Dept Mgrs	

MSFC S&MA Objective 4:
Improve teamwork and management credibility in the S&MA Directorate

Key Decisions and Actions	Start Date	Scheduled Completion Date	Responsibility	Performance Measures/Metrics
4.1　Conduct annual Strategic Planning Off-Site with QD01 direct reports	10/01/05	09/29/06	S&MA Director	• Strategic Planning Off-site conducted annually
4.2　Conduct quarterly ½-day off-sites to discuss Directorate issues	12/01/05	Ongoing	Scott Jackson	• Quarterly off-sites conducted
4.3　Assess modifying annual chili cook-off so that entries are per dept/office teams rather than by individual	10/01/05	11/30/05	Scott Jackson	• QD/HEI polled to determine interest in changing format
4.4　Meet quarterly for informal off-center lunch	12/01/05	Ongoing	Scott Jackson	• Quarterly lunches scheduled
4.5　Continue S&MA Director's brown bag lunches	10/01/05	Ongoing	S&MA Director	• Brown bag lunches continued
4.6　Conduct annual S&MA employee satisfaction survey	10/01/05	09/29/06	Scott Jackson	• Annual survey conducted
4.7　Develop QD Management Code of Conduct	10/01/05	06/10/06	Dave Spacek	• Code of Conduct adopted by S&MA Management team

MSFC S&MA Objective 4 – con't:
Improve teamwork and management credibility in the S&MA Directorate

	Key Decisions and Actions	Start Date	Scheduled Completion Date	Responsibility	Performance Measures/Metrics
4.8	Develop and execute survey for S&MA employees on performance of their mgr/supervisor relative to Code of Conduct items	12/01/05	06/30/06	Dave Spacek	• Survey developed and completed for each QD dept/office manager
4.9	Develop and execute survey for S&MA managers/supervisors on performance of their peers relative to Code of Conduct items	12/01/05	06/30/06	Dave Spacek	• Survey developed and completed for each QD dept/office manager
4.10	Conduct employee focus group to identify specific areas requiring improvement	12/01/05	06/15/06	Dave Spacek	• Meeting conducted
4.11	Develop set of recommended actions/ECDs based on feedback obtained from 4.10, and obtain QD management concurrence	01/31/06	06/30/06	Dave Spacek	• Actions identified and QD management concurrence obtained

MSFC S&MA Objective 5:
Improve S&MA advocacy and resource forecasting process

Key Decisions and Actions	Start Date	Scheduled Completion Date	Responsibility	Performance Measures/Metrics
5.1 Finalize and implement S&MA Business Plan	10/01/05	06/30/06	Scott Jackson	• S&MA Business Plan completed
5.2 Fold CLV in the S&MA Business Plan	10/01/05	04/28/06	Scott Jackson Steve Tesney	• CLV folded into S&MA Business Plan
5.3 Develop Strategic Planning S&MA worksheet for all organizations (FTE/WYE, Skill Level) to be completed NLT 3 days before S&MA off-site	09/01/05	09/30/05	Scott Jackson Dept Mgrs	• Strategic Planning S&MA Worksheet completed three days before off-site
5.4 Conduct Strategic Resource Planning Offsite annually	10/01/05	09/30/06	Scott Jackson S&MA Director	• Strategic Resource Planning Offsite conducted annually
5.5 Transition AOA into S&MA governing document for resource agreement with customers	10/01/05	09/30/06	Scott Jackson Dept Mgrs	
5.6 Develop strategic communications process, including at least 6 center-wide communiqués annually about S&MA related topics	10/01/05	09/30/06	Scott Jackson Dept Mgrs	Minimum 6 S&MA-related communiqués completed annually
5.7 Develop customer education process and present S&MA capabilities to all MSFC Directorates/Offices by end of FY06	10/01/05	09/30/06	Scott Jackson Dept Mgrs	S&MA customer education presented to all MSFC orgs
5.8 Present "Outreach" accomplishments as part of MSR	10/01/05	09/30/096	Dept/Ofc Mgrs	Presented monthly
5.9 Meet w/Business Development (Seabrook) monthly	10/01/05	Ongoing	Roy Malone	Meetings conducted monthly

IV. DEPARTMENTAL CORE COMPETENCIES AND PRODUCTS/SERVICES:

The following S&MA core competencies will be required throughout the organization. In addition, products and services have been identified for each of its departments. These core competencies, and products/services are intended to define the basic core disciplines and necessary scope of skills for S&MA to serve MSFC and agency programs and projects in the future, as well as its national goals.

        A.   **S&MA Cross-Cutting Core Competencies**

          1.   **System Safety Engineering**

          2.   **Reliability/Maintainability Engineering**

          3.   **Quality Assurance**

- **Engineering**
- **Specialist**

          4.   **Software Assurance**

- **Engineering**
- **Specialist**

          5.   **Project/Program Assurance**

          6.   **Industrial Safety**

- **Engineering**
- **Specialist**

          7.   **Administrative Support**

- **IM**
- **MSA**
- **SFA**
- **Personnel**

          8.   **Business Management**

          9.   **Risk Management**

- **Training**
- **Facilitation**

B. **Launch Systems Assurance Department (QD10)**

Products and Services

- **Requirements development, implementation, and verification**
- **RFP, SOW, and DRD development and review**
- **Manage, plan, and coordinate resources in support of Exploration Launch Office (ELO) programs and projects**
- **Assessments of contractor-developed quality, reliability, maintainability, integrated logistics support, system safety, and risk evaluations**
- **Development of reliability and maintainability analyses, assessments, and FMEA/CILs for in-house projects**
- **Development of Fault Tree Analyses, Hazard Analyses, and Safety Data Packages for in-house projects**
- **Development and review of S&MA documentation such as S&MA Plans, Quality Plans, Reliability and Maintainability Plans, Safety Plans, PRACA Plans, and Analyses Plans**
- **Development and review of Probabilistic Risk Assessments for Exploration Launch Office and Constellation projects**
- **Oversight and insight of program/project processes and hardware**
- **Material Review Board support**
- **Contractor surveillance through in-plant Defense Contract Management Agency (DCMA) and Resident Management Office (RMO)**
- **Contractor performance monitoring/evaluation including contractor process and hardware audits**
- **Milestone Review participation including SRR, SDR, PDR, CDR, DCR, Pre-Ship, Acceptance, SMSRR, LRR, and FRR**
- **Certification of Flight Readiness (CoFR) process support**

C. **Shuttle Assurance Department (QD20)**

Products and Services

- **Change evaluations of Change Requests (CRs), Engineering Change Packages (ECPs), Requirement Change Notices (RCNs), Launch Change Notices (LCNs), manufacturing process changes, Hazard Report (HR) and Critical Items List (CIL) updates**

- **Launch countdown support – Go/No Go recommendations**

- **Post-flight assessment participation and SPAT Board membership. Evaluation of observations/findings and recommended dispositions.**

- **Contractor performance monitoring and evaluations (HEI and Shuttle Prime Contractors)**

- **Project Office action item responses**

- **Delegated agency management [e.g. Letters of Declaration (LoDs), POCs]**

- **Flight readiness assessments (incl PFAs) and recommendations**

- **Evaluation of hardware non-conformances and manufacturing process departures. Management Review Board membership.**

- **Problem Reporting and Corrective Action (PRACA) evaluations, database management and trending**

- **Systems Safety Review Panel presentations and AI responses**

- **Quantitative risk assessments [Probablistic Risk Assessment (PRA), Quantitative Risk Assessment Software (QRAS), Sapphire)**

- **Hardware acceptance (DD-250 review and approval)**

- **Government Mandatory Inspection Point (GMIP) definition and implementation**

- **Surveillance findings**

- **Design review [Preliminary Design Review (PDR), Critical Design Review (CDR), Design Certification Review (DCR)] participations and identification of Review Item Discrepancies (RIDs)**

- **Audit findings [Process Product Integrity Audit (PPIA), NASA Engineering and Quality Audit (NEQA)]**

- **NASA Discrepancy Reports**

- **Review and recommend disposition of NASA Safety Reporting System (NSRS) items**

- **Corrective action report dispositions**

D. **Science and Mission Systems Assurance Department (QD30)**

Products and Services

- **Requirements development and implementation**

- **Hazard Analysis**

- **Failure Modes and Effects Analysis/Critical Items List (FMEA/CIL)**

- **Fault Tree Analysis (FTA)**

- **Milestone design review [System Requirements Review (SRR), Preliminary Design Review (PDR), Critical Design Review (CDR), Acceptance Review (AR)], Preship Review (PSR) participation and identification of Review Item Discrepancies (RIDs)**

- **Engineering Change Request/Engineering Change Package (ECR/ECP) and Waiver/Deviation Reviews**

- **Assessments of contractor-developed quality, reliability, system safety, and risk evaluations**

- **S&MA Plans (S&MA, Quality, Reliability/Maintainability)**

- **Support to JSC/KSC safety reviews and action item responses**

- **Statement of Work/Data Requirements Document (SOW/DRD) and Letter of Delegation (LOD) development**

- **Contractor performance monitoring and evaluations**

- **Project documentation evaluations/inputs**

- **Procurement Quality Requirements**

- **Material Review Boards**

- **Review and evaluation ALERT dispositions**

- **Government Mandatory Inspection Point (GMIP) definition and implementation**

- **Application assessments for new tools, technologies, and processes**

- **Certification of flight readiness**

- **Review and recommend disposition of NASA Safety Reporting System (NSRS) items**

- **Corrective action report dispositions**

- **Risk Management consulting and support**

- **Export control**

E.   **SR&QA Policy and Assessment Department (QD40)**

Product and Services

- **Easily accessible guideline documentation (DRDs, OIs, MPD, MPG, etc.) for each S&MA process (i.e., quality plan, reliability plan, Statistical Process Control (SPC), hazard analysis, FMEA, etc.)**
- **Facilitate the selection of enhanced tools for the implementation of key S&MA processes**
- **Expert technical support to program(s) on SR&QA issues**
- **Safety, Reliability, Quality, and Software Assurance discipline expertise**
- **Coordinate MSFC portion of Safety and Mission Success Review (SMSR) activity**
- **Flight hardware safety assessments, including PRA**
- **S&MA core discipline training and awareness**
- **Continuous Risk Management (CRM) training, tools, facilitation, and maturity assessments**
- **Support MSFC Fracture Control Board**
- **Center POC for Process-Based Mission Assurance (PBMA) System**
- **Personnel skill certification maintenance (CERTRAK)**
- **Management, conduction and facilitation of audits both internal and external (ISO, NEQA, Supplier, etc.)**
- **Center Material review Board (MRB) Chairperson**
- **Lessons learned database**
- **SR&QA policy development**
- **Focal point for NASA HQ initiatives**
- **PRACA administration**
- **MSFC NSRS technical**
- **ALERT administration**
- **Corrective Action and Recurrence Control System**
- **Export control**
- **Independent Assessments (IA), and Programmatic Audits and Reviews (PA&R)**
- **IA Report, Engineering Information Reports (EIRs)**
- **As-Built Configuration Summaries**
- **Parts Tags and Discrepancy Records**
- **Manage S&MA Quality Records Center**
- **MSFC stamp custodian**
- **Quality inspections, including NDE, test monitoring, and audits**
- **Oversight and insight of program/project processes and hardware**
- **Oversight and insight into operations at MSFC test facilities**
- **Student Launch Initiative support**

F.   Industrial Safety Department (QD50)

Products and Services

- **Facility hazard analyses**
- **Facility inspections**
- **Hazardous ops surveillance**
- **Mishap investigation and analysis**
- **Center-wide policy/procedures**
- **Fire protection consultation**
- **Fire drills**
- **Safety audits**
- **Training and awareness**
- **Design and procedure review**
- **Technical consultation**
- **Construction inspections and monitoring**
- **Contractor safety and health plans review**
- **Safety reviews (ORI's, SRT's, TRR's, etc.)**
- **Explosive siting problems**
- **Critical lifting operations oversight**
- **Safety certifications**
- **Safety database development/management**
- **Hazardous operations inventory**
- **Employee concerns reporting system**
- **Supervisor safety support system**

APPENDIX A
SWOT ANALYSIS

The S&MA Senior Management Team updated their SWOT Analysis to understand and review their position in the new S&MA environment of the agency.

STRENGTHS

- **S&MA has achieved Directorate status (true product line capabilities).**

- **True reliability expertise has returned to S&MA.**

- **People have energy to meet customer's expectations.**

- **We possess a very dedicated workforce.**

- **We maintain a good support contractor.**

- **Good relationships and mutual respect exist with other S&MA organizations at both other centers and HQ.**

- **The Center Director has strong support for S&MA.**

- **We maintain the best S&MA databases (Industrial Safety Department).**

- **We have established a peer review process.**

- **We have developed clearly-defined training programs for all employees.**

- **We have been a high level advocate in the agency program.**

- **NASA administrator strongly supports the S&MA function.**

- **We will possess strong advocacy in engineering contractor.**

- **We have developed a more diverse workforce in expertise.**

STRENGTHS

- **Staffing is closer to 100%.**

- **S&MA Deputy Director position is elevated to SES position.**

- **Center-level responsiveness to staffing needs is significant.**

- **Teamwork has improved with a willingness to share resources across departments.**

- **S&MA agreement from 4D process.**

- **We have alignment with the center on scorecard objectives and metrics.**

- **There is follow-up on the strategic plan.**

- **We have increased the stature of two departments in their leadership grade levels.**

- **There is stronger emphasis on recognizing and rewarding employees.**

WEAKNESSES

- **Continued recruitment of quality and safety engineers is needed.**

- **Information flow and communication across departments could be improved.**

- **We function in a reactive mode.**

- **There is no centralized quality organization.**

- **There is no "One NASA" S&MA, especially for systems safety and quality.**

- **S&MA needs more visibility to HQ.**

- **Morale is improved, but not optimum.**

- **We have fewer participants than desired in PDRM process for training.**

- **Resource management is improving, but not at optimum levels.**

- **It is difficult for departments to look at S&MA as a whole, especially in resource utilization.**

- **Some personnel are holding past grievances, influencing their commitments.**

- **There is still work to do on creating stronger accountability within S&MA and at the center for S&MA.**

- **S&MA may be still unwelcome by some projects in the early design stage.**

- **We continue to struggle with the level of work and responsibilities we have (unfunded mandates).**

- **Some programs and projects seek out our discipline expertise elsewhere.**

WEAKNESSES

- **Some new members to S&MA may not be fully prepared or engaged for their technical work responsibilities.**

OPPORTUNITIES

- **We are poised to receive additional resources.**

- **The new funding methodology will allow more autonomy and independence.**

- **Customers are more receptive to receive our services than in past years.**

- **We are welcomed by new projects as a value-added partner.**

- **There is strong alignment with new senior management of MSFC.**

- **We can be successful in this unique window of opportunity.**

- **Recruitment of new discipline experts continues.**

- **We have in-roads and insights to support the exploration enterprise of HQ in developing their requirements.**

- **We can create a cohesive quality process.**

- **We can benchmark other S&MA organizations.**

- **Opportunities exist to really make a difference, changing the past stereotype and stigma and improve the S&MA product.**

- **Empowering our people to be passionate about making a difference is vital to our success.**

- **Increasing participation in training and mentoring.**

- **Metrics provide a means to audit our programs and processes.**

- **Capitalizing on the new exploration initiative, creating in-roads in bottoms-up S&MA process for new programs with right staffing and resources.**

THREATS

- **Competition from other organizations exists.**
- **Not receiving additional dollars and discipline resources (FY04 and beyond) would slow progress.**
- **Not receiving the right additional resources would stop momentum.**
- **Not responding correctly to new initiatives would be perceived poorly.**
- **Not having a committed or cohesive management team would be a missed opportunity.**
- **Not following through on new directions would be a reactive stance.**
- **Not sustaining post-Columbia gains in organizational culture.**
- **Not sustaining employee development and training.**
- **Not fully implementing new funding model.**
- **Not maintaining our core capability in the new center reorganization.**
- **Outcome of new S&MA Director appointment**
- **Not continuing to attract and retain proper skill mix of people.**
- **Not maintaining a balance of current exceptional work with taking on new work.**
- **Loss of RMS.**
- **Re-competition of mission services contract at a critical point.**
- **Uncertainty of SMO status in reorganization.**

THREATS

- **Outcome of interface with independent technical authority.**

- **Burnout of people, especially in support of Shuttle Program.**

- **Disposition of shuttle return to flight.**

- **Continued increase of unfunded mandates and requirements changes.**

- **Movement of people to new program-related positions.**